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Inventor: Cécilio Arribas,
Applicant: Muller et Cie.
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DECORATIVE GAS BURNER

The present invention relates to decorative gas burner which give the appearance of wood logs, pieces of coal, charcoal, peat blocks or any other solid combustible substance.

The inventive burner is characterized in that it comprises an assembly of heat resistant material, and the heat is derived from at least one element comprising an upper portion having the shape or the appearance of said wood logs, pieces of coal, etc., and a lower portion in which at least one duct or cavity which communicates, on the one hand, with a gas injector associated with input means and a mixture of combustion air and, on the other hand, with a predetermined number of locations on the surface of said upper portion by means of a plurality of small channels, with ignition means being provided to light the mixture of combustible material at the right side of the output openings of said small channels.

Figure 1 is a schematic vertical cross section of an elevational side view of an embodiment of a gas burner according to the invention, and Figure 2 is a vertical cross-sectional view along line II-II of the device in Figure 1.

In this embodiment of the invention, the burner is constituted of a single-piece assembly 1 comprising an upper portion 2 configured here as an example, with two wood logs 2a and 2b (Figure 2) and a lower portion 3 having a generally parallelepiped shape (for example) in which, underneath two artificial logs 2a, 2b, two ducts or horizontal parallel cavities 4 are closed on one end and open at the other.

The ducts or cavities 4 communicate by means of their upper portion and by means of small channels 5 which vary in number, shape, cross section, configuration and disposition in the assembly 1, with the upper surface 3a of portion 3 being at the foot of the "logs" 2a, 2b and on both sides of the latter. The shape of the openings 6 of the outlets of channels 5 vary; they may be round or elongated, for example, and are variably distributed all around the logs 2a, 2b.

The lower portion 3 comprises a collar 7 about the circumference, and the entire assembly 1 rests on a frame 8.

The outlet end of the ducts 4 is widened in order to form a venturi 9; it terminates at the right side of a chamber 10 to let in a mixture of combustion air and is connected to the side of the frame 8, which is open for this purpose. The chamber 10 is equipped with entries 11 for the primary air and a gas injector 12.

The assembly 1 is made of a heat and flame resistant material. It may be a molded material, which allows the upper portion 2 to have any desired configuration. The material may be made of ceramic fibers such as "PROCAL" fibers, steatite, composite material having a mineral base such as rock wool or mica particles agglomerated by mean of a suitable organic or inorganic binder. Preferably, the molding is accomplished in a vacuum.

The material may also be based on refractory earths or oxide cement and more particularly aluminum. The material may also be cast aluminum or iron, a metal or a metal alloy and may be made by drawing, shaping, or machining.

One of a plurality of deflectors may be arranged in the chamber 10 in order to obtain a homogenous mixture.

Figures 3 and 4 illustrate a variant of the embodiment in Figures 1 and 2, in which burner is intend to operate in a closed hearth and is enclosed in an enclosure 13 (fireplace, wood-or coal-burning stove). In Figures 3 and 4, the identical members as those in Figures 1 and 2 bear the same reference numerals.

The lower position of the burner assembly comprises two portions 3b, 3c that are superimposed by a joint surface 14 containing the axis of the two conduits 4.

Secondary combustion air intakes (originating either from the room or from the outside of the room by means of non-illustrated pipes) comprise two passages 15 which are arranged in the wall of the enclosure 13 at the right side of conduits 16, which are arranged in the lower portion (3b, 3c) of the burner assembly on both sides of logs 2a, 2b.

Predetermined channels 5 may terminate on the surface of the upper portion (2a, 2b) as illustrated at 6a.

The channels 5 may be obtained with the help of fine pins arranged in the mold for the assembly 2a, 2b, 3, 3b, 3c or by molding a porous material with communicating cells.

Portions 3b, 3c are assembled by gluing or any other means.

The decorative portion (upper portions 2, 2a, 2b) are wood imitations, the charcoal or an other combustible solid is designed throughout or painted on, enamel, or any other material allowing the best possible illusion to be obtained.

Figure 5 is a partial perspective view of a burner of the type illustrated in Figures 3 and 4. An ignition device assembly and a pilot light is arranged in the front, with the front portion of the fire place being closed by a glass (not illustrated) and allowing the burning fire to be observed.

The inventive device is primarily intended for closed fireplaces, but it may also be used in open fireplaces. If the material for the burner assembly (2, 3, 3b, 3c) is porous, this burner will be used in a closed fireplace.

In the embodiment of Figure 6, the upper decorative portion (logs 2a, 2b) is movable relative to the low portion (3b, 3c). To this end, said logs 2a, 2b are provided on the lower surface with positioning pins 18.

Imitation pieces of charcoal 2' in Figure 7 may also be substituted for the logs 2a, 2b. This portion 2' is, of course, equipped on the upper surface with a certain number of inlet openings 6 for the principal mixture of gas and air and is advantageously distributed.

It will be understood that the invention is limited to the illustrated and described embodiments. On the contrary, they encompass any variants especially with respect to the quantity, the shape, and the dimension of the decorative elements (logs, charcoal pieces, etc) and making the assembly of the burner in one piece (the decorative portion, properly speaking 2, 2') and the inlet pipe for the mixture of primary combustion gas and air 3, 3b, 3c.

CLAIM

1. Decorative gas burner which give the appearance of wood logs, pieces of coal, charcoal, peat blocks or any other solid combustible substance, characterized in that said burner comprises an assembly of heat resistant material and the heat is derived from at least one element (1) comprising an upper portion (2,2') having the shape or the appearance of said wood logs, pieces of coal, etc., and a lower portion (3; 3b; 3c) in which at least one duct or cavity (4), which communicates, on the one hand with a gas injector (12) associated with input means (9, 10,11) and a mixture of combustion air and, on the other hand, with a predetermined number of locations (6,6a) on the s surface of said upper portion by means of a plurality of small channels (5), with ignition means (17) being provided to light the mixture of combustible material at the right side of the output (6,6a) openings of said small channels.

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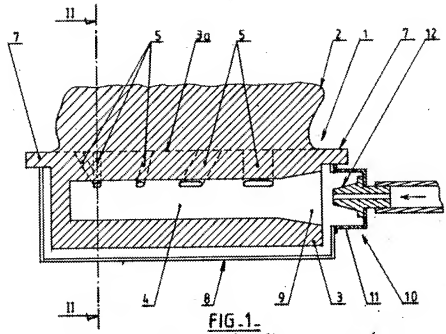

FIG.1.

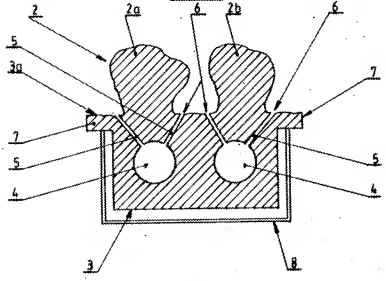

FIG.2.

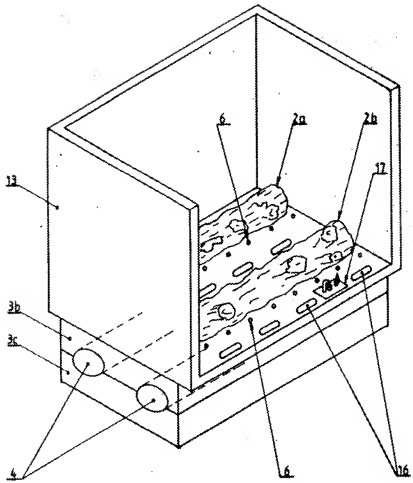

FIG. 5.

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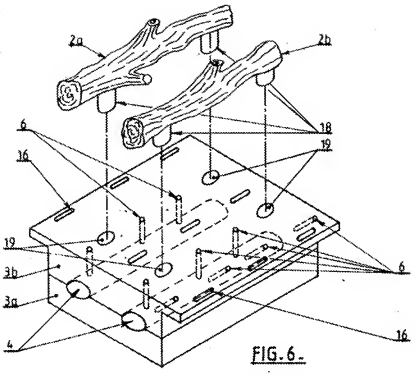

FIG.6.

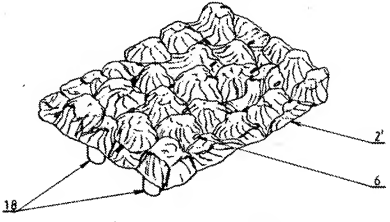

FIG.7.